

This Opinion was not written for publication

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

(90/004,673)

Paper No. 31

(90/004,627)

Paper No. 30

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CIU CORPORATION

Appeal No. 99-0318
Reexamination Nos. (90/004,673 and 90/004,627)¹

ON BRIEF

Before MEISTER, FRANKFORT, and GONZALES, Administrative Patent Judges.

FRANKFORT, Administrative Patent Judge.

DECISION ON APPEAL

¹ Merged reexamination proceeding for U.S. Patent No. 4,516,372 issued May 14, 1985, to CIU Corporation, based on application 06/515,222, filed July 20, 1983 which is a continuation of application 06/293,033 filed August 14, 1981, now abandoned. Reexamination requests filed June 4, 1997, and May 9, 1997.

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

This is a decision on appeal from the examiner's final rejection of claims 14 through 16, 21 through 24, 31 and 34 through 36 in this merged Reexamination proceeding identified by Control Nos. 90/004627 and 90/004673 for U.S. Patent No.

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

4,516,372, issued May 14, 1985. The original patent included claims 1 through 16. Claims 17 through 48 were added by amendments during the reexamination proceedings. Claims 1 through 13, 17 through 20, 25 through 30, 32, 33, 37 through 44 and 48 have been canceled. Claims 45 through 47 have been indicated by the examiner to contain patentable subject matter, but currently stand objected to as being dependent from a rejected base claim.

Appellant's invention is directed to concrete walls, such as those between the inside and outside of a building, where a high level of insulation against cold and/or hot weather is desired. More specifically, the invention relates to concrete form work which utilizes a material having high insulating properties, such as low density plastic foam, wherein foam plastic panels (12) of the form work, along with backing plates (16) and tie wires (22) therebetween (e.g., Figures 1 and 2), act to withstand the forces of concrete placement and hardening therein and subsequent structural loads, and are left in place after the concrete placed therein has hardened

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

so as to thereby become part of the finished wall. As noted
in column 5, lines 48-53, of the specification,

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

[a]lmost all types of known interior or exterior wall coverings, such as wall covering 60 (see FIG. 2), can be attached to wall 30. For example, for a wood or sheetrock interface with wall 30, self-taping screws can be screwed to backing plates 16.

A copy of claims 14 through 16, 21 through 24, 31 and 34 through 36 on appeal, as they appear in the Appendix to appellant's brief, is attached to this decision.

The references of record relied upon by the examiner in rejecting the appealed claims under 35 U.S.C. § 103 are:

| | | |
|--|---------|---------------|
| Skarphedinsson et al. (German '730) (German, Offenlegungsschrift) | 2111730 | Dec. 14, 1972 |
| Prumm (German, Offenlegungsschrift) | 2255810 | May 22, 1974 |

While we recognize that there are certain translations of the applied foreign references currently in the record, given the controversy over the content of those translations, we (the U.S. Patent and Trademark Office) have also ordered our own translations of the applied foreign language documents. Copies of the translations we have obtained are attached to this decision.

Appeal No. 99-0318
Reexamination Nos. (90/004,673 and 90/004,627)

Claims 14 through 16, 21 through 24, 31 and 34 through 36 stand rejected under 35 U.S.C. § 103 as being unpatentable over German '730 in view of Prumm.

Rather than reiterate the examiner's explanation of the above-noted rejection and the conflicting viewpoints advanced by the examiner and appellant regarding the rejection, we make reference to the examiner's answer (Paper No. 24, mailed August 20, 1998) for the examiner's reasoning in support of the rejection, and to appellant's brief (Paper No. 22, filed May 4, 1998) and reply brief (filed September 4, 1998) for appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to appellant's specification and claims, to the various translations of the applied prior art references, to the affidavits and declarations filed by appellant and/or on appellant's behalf, and to the respective positions articulated by appellant and the examiner. As a

Appeal No. 99-0318
Reexamination Nos. (90/004,673 and 90/004,627)

consequence of this review, we have made the determinations
which follow.

We turn first to independent claim 14, noting that this
claim defines a finished concrete wall wherein the form work
that was employed for holding the concrete during the period
of time

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

during which the concrete was poured and was cured has become part of the finished permanent wall. In addition, this claim recites a "wall covering" attached to the backing plates of the form work as part of the finished concrete wall.

German '730, in the attached translation by FLS, Inc. ordered by the Patent and Trademark Office, discloses concrete form work comprised of a pair of panels (e.g., 10, 11 in Figs. 1 and 2) with backing plates (18) of the panels tied together by tie rods (12). As noted generally on page 2 of the translation, the panels, backing plates and ties are designed and arranged so as to provide for absorption of tensile stresses arising when the space between the panels is filled with poured material, such as concrete. Figures 2 and 3 of German '730 make it clear that a series of forms stacked one above the other is employed therein to provide an upwardly extending elongated cavity that receives the poured concrete material (16). Panel (11), in particular, is described as being made of a material having good insulating properties, preferably plastic foam or other soft, porous material (translation, page 6).

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

In the paragraph bridging pages 5 and 6 of the translation, it is noted that the form work of Figure 1 in German '730 is used for the erection of outer walls and that for this reason the two plates/panels (10, 11) are different. In particular, it is indicated that panel (10), which forms the outside of the wall, must be resistant to weathering. However, it is further noted that the panels can be identical, if the form work is to be used to build an interior wall (translation, pages 5-6). In our opinion, the clear import of this disclosure in German '730 is that an interior wall would be constructed using form work as in Figures 1 and 2 with the exception that both of the panels/plates of the form work would be like panel (11) seen in Figure 2, since such interior panels would have no need to be resistant to weathering.

The backing plates or pressure-distribution elements (18) of German '730 are described (translation, page 4, lines 1-2) as "consisting preferably of wood or other material which can be nailed." On page 7 of the translation, it is indicated that the pressure-distributing elements (18) must be suitably sized and may consist of bars sunk into the panels/plates

(11), e.g., as shown in Figure 1, and that they can if desired be used "for the attachment of facing plates which are not shown." Page 4 of the translation provides further insight into the pressure-distribution elements and the facing plates by indicating that

[t]he pressure-distribution elements can, as mentioned, be made of wood or another material which can be nailed, for which reason they can be employed for the mounting of an additional facing plate. This can be important, if the invented structural element is formed in such a way that the pressure-distribution devices take the form of cleats mounted in gutters on the visible side of the plate in question, so that these gutters can be covered with a facing plate.

In contrast with appellant's position (brief, pages 6-26) and the affidavit by Blanca A. Keogan, after considering all of the evidence before us, it is our opinion that the "facing plates" mentioned in the attached translation by FLS, Inc. would have been understood by one of ordinary skill in the art as being full plates or panels that are nailed to the wooden pressure-distribution elements (18) of the finished wall of German '730 so as to cover the surface of the wall or panels thereof and thereby hide the gutters or channels on the

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

visible side of the wall in which the pressure-distribution elements (18) are positioned, thus making the "facing plates" of German '730 fully responsive to the "wall covering attached to said backing plates" as set forth in appellant's independent claim 14 on appeal. Given the showing of the form work in Figure 1 of German '730 and the

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

translation by FLS, Inc., we do not share the opinion of appellant and Blanca A. Keogan (affidavit, paragraph 11) that the unshown part (i.e., facing plate) referred to in German '730 is merely "a small plate in the groove for covering the wood strips, nuts, etc."

The last sentence of the FLS, Inc. translation indicates that "[w]hether such facing plates are used or not" the nuts on the rods (12) can be completely covered by means of an inserted plug, or that recesses (19) as shown in Figure 1 for the nuts may be provided, thus, in our view, indicating that the disclosed "facing plates" are used in addition to an inserted plug provided in the wood strips (18) to cover the nuts of the rods (12), and that the facing plates are intended to cover the entire face of a panel or wall constructed therefrom and to be nailed into the wooden pressure-distribution elements (18) so as to cover the gutters or channels on the visible side of the foam panels in which the pressure-distribution elements are mounted. This understanding is further supported by considering the translation at page 4, wherein it is noted that the "gutters

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

can be covered with a facing plate" (emphasis added), thereby suggesting a single facing plate used to cover several gutters.

Nor do we find appellant's arguments (brief, pages 15-23) that German '730 does not have the element of claim 14 that requires that each panel have backing plates which are located so as to be "abutting the exterior surface of each panel," to be persuasive. To the extent that the affidavit by Prof. Robertson establishes that the wooden pressure-distribution elements (18) of German '730 may be submerged into the foam material of the panel therein once the concrete has been poured, we note that when the members (18) of German '730 and appellant's backing plates (16) are of a similar size (e.g., 3.5 inches wide for appellant's backing plates 16 and 4-4.5 inches wide for the elements 18 of German '730), both appellant's backing plates (16) and the members (18) of German '730 are submerged into the foam material of their respective panels to some extent. At page 4 of Prof. Robertson's affidavit it is indicated that appellant's backing plates (16) will be submerged into the foam panel "about 0.05 in. at the

bottom of an 8-ft wall" (lines 6-9), while the backing members (18) of German '730 having a width of 4-4.5 inches will be submerged into the foam panel therein at the bottom of an 8-ft wall "0.03 in." (Page 5, lines 4-9). Moreover, even when the pressure-distribution elements (18) of German '730 are assumed to be 2 inches in width, Prof. Robertson's affidavit (page 4, lines 36-41) indicates that the submergence at the bottom of an 8 ft wall would be on the order of 0.09 in., which is still similar to the submergence of appellant's backing plates (16) into the foam panel therein. Thus, to the extent that appellant's backing plates are considered to be "abutting the exterior surface of each panel" as required in claim 14 on appeal, so to are the backing plates or pressure-distribution elements (18) of German '730 considered to be abutting the exterior surface of each of the panels.

As for appellant's assertions (brief, pages 26-27) concerning the holding means of claim 14 on appeal, we again point to the affidavit by Prof. Robertson (at pages 1-2) and note that both the holding means of appellant's form work and the holding means of the form work of German '730 allow some

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

movement of the foam panels therein once the concrete has been poured into the form work. Prof. Robertson indicates that appellant's arrangement would have surface undulations having a maximum bulge in the center of each panel, and at the bottom of an 8 ft wall, of about 0.08 in. when the backing plates (16) therein at the top and bottom of each panel are 3.5 inches wide, while the form work of German '730 would have an outward bulge at the bottom of an 8ft wall of 0.03 in. between the struts and 0.09 inches at the upper and lower edges of the panel when the backing members (18) are assumed to be 1 inch wide struts located one-quarter and three-quarters from the top of each panel, as is generally shown in Figure 2 of the German reference. Thus, again we see that the form work of German '730 and the form work of appellant's invention have similar characteristics with regard to preventing outward horizontal movement of said backing plates and of said panels as set forth in claim 14 on appeal, even when the pressure-distribution elements (18) of German '730 are assumed to be only 1 inch wide and appellant's backing plates (16) are assumed to be much wider, i.e., 3.5 inches wide. For that reason, we do not consider that this limitation in appellant's

Appeal No. 99-0318
Reexamination Nos. (90/004,673 and 90/004,627)

claim 14 can be relied upon as patentably distinguishing appellant's claimed subject matter from that taught or suggested in German '730.

Regarding the Grutsch declaration, we do not consider that it establishes long felt need and failure by others, or in any way establishes that appellant's invention is recognized by those skilled in the art as having solved any such long felt need in the art. The mere fact that other patents have existed on foam-type forms for many years and stressed that they provide good insulation and a low cost alternative to wood framing or forms, and yet (to appellant's knowledge) have apparently not been commercialized, falls far short of establishing long felt need and failure by others.

As a general rule, to establish long-felt need, evidence must be presented which demonstrates the existence of a problem which has been recognized in the industry and has remained unsolved over a long period of time. This can be accomplished, for example, by the testimony of experts in the industry, or publications or the like, which speak to the

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

duration and extent of the problem, and of the substantial efforts and resources which have been expended during that time in attempts to solve the problem. In addition, once the long-felt need has been established, the requisite nexus between the long-felt need and the claimed invention must be demonstrated, i.e., it must be shown that the claimed invention in fact satisfied that long-felt need. This may be demonstrated, for example, by objective evidence establishing commercial success, that is, that the industry purchased the claimed invention because it satisfied the long-felt need. See, for example, Simmons Fastener Corp. v. Illinois Tool Works, Inc., 739 F.2d 1573, 1575, 222 USPQ 744, 746 (Fed. Cir. 1984) and W.L. Gore Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1556, 220 USPQ 303, 315 (Fed. Cir. 1983).

While we have appellant's opinion in the declaration signed December 4, 1997 concerning the issues noted above, we find no evidence that a problem regarding foam-type concrete forms has been recognized in the industry and has remained unsolved over a long period of time. Nor do we find any evidence of record that the claimed concrete wall of

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

appellant's invention is recognized by the industry to have solved a long-felt need in the art. Thus, we conclude that appellant's declaration is entitled to little, if any, weight in the obviousness determination before us in this appeal.

The German patent to Prumm, like German '730, is directed to lightweight, foamed plastic panels (translation, page 7) that are used to construct "lost form work" which is utilized in the construction of concrete walls and is not removed after the solidification of the concrete, but forms a thermal insulation layer on the completed concrete wall. While we are of the opinion that the teachings of German '730 alone would have been suggestive of a completed interior concrete wall wherein both sides of the wall have foam insulation form work (like the panel (11) of German '730) as an integral part of the finished wall, we recognize appellant's arguments to the contrary, and therefore also rely upon the clear teachings of Prumm in this regard to arrive at our conclusion that the collective teachings of the applied references would have been suggestive to one of ordinary skill in the art at the time of appellant's invention of such an arrangement.

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

Having considered the respective positions of the examiner and appellant and all of the evidence of obviousness and non-obviousness relied upon by both sides, we will sustain the examiner's rejection of independent claim 14 under 35 U.S.C.

§ 103 based on German '730 and Prumm.

With respect to dependent claims 31 and 34 through 36, it is our opinion that the combined teachings of German '730 and Prumm are clearly suggestive of the claimed subject matter. Regarding claims 31 and 34, the binding elements or tie rods (12) of German '730 are one-piece mechanical elements or connecting members that form part of the "holding means" of the concrete wall therein and operate in exactly the same manner as those defined in appellant's claims on appeal. As for the elongated reinforcement attached to the one-piece mechanical elements as set forth in claim 35 on appeal, we point to the steel reinforcements (45) seen in Figure 2 of Prumm and conclude that it would have been obvious to one of ordinary skill in the art to include such reinforcement members in the concrete wall of German '730 for the self-

evident purpose of providing added reinforcement to the finished concrete wall therein.

Unlike appellant (brief, page 44), we consider that German '730 defines, or would have been suggestive of, a section of form work which is "one integral stackable unit" wherein each panel has at least two backing plates (18) and the molded plastic of the panel (e.g., 11) of an interior wall of German '730 joins both backing plates of that panel to each other and to the mechanical elements (12). We do not perceive that claim 36 on appeal necessarily requires the backing plates (16) and tie members (22) of appellant's invention to be molded into the molded plastic panel at the time of its formation, as appellant seems to believe. Moreover, while German '730 envisions certain disadvantages to making the panels therein in such a fashion, it is apparent from the translation thereof at page 2 that such an arrangement of molded-in-place members is well known in the art. In addition, Prumm (in the paragraph bridging pages 4-5 of the translation) likewise indicates that such a molded-in-place arrangement of the elements of a foam plastic form work panel is well known

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

in the art and, in our view, would have therefore been suggestive of such an arrangement.

Thus, in light of the foregoing, the examiner's rejection of claims 31 and 34 through 36 under 35 U.S.C. § 103 is likewise sustained.

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

Next for our consideration is the examiner's rejection of claims 15, 16 and 21 through 24 under 35 U.S.C. 103 based on German '730 and Prumm. Claim 15 on appeal sets forth that the backing plates of the form work of appellant's claimed concrete wall are "elongated metallic plates" and that such metal backing plates are positioned on each of the forms

so that the plate of each form is an extension of the plates on adjacent forms to thereby provide a larger plate extending along the wall to provide a convenient means for attaching loads to the wall over an area at least partly covering a series of forms.

This construction is best seen in Figure 5 of the Grutsch patent. No such structure is taught or suggested in German '730 or Prumm.

Moreover, given the emphasis in German '730 on providing pressure-distribution elements (18) therein which "can be nailed," we do not agree with the examiner's position (answer, page 5) that it would have been obvious to one of ordinary skill in the art to replace the wooden, nailable struts (18) of German '730 with metallic plates as in Prumm. Accordingly,

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

the examiner's rejection of claim 15 on appeal, and claim 16 which depends therefrom, will not be sustained.

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

Turning to claims 21 through 23, like appellant, we do not consider that the struts or backing members (18) of German '730, seen in Figures 1 and 2, can reasonably be considered to be adjacent or closely adjacent to the horizontal joint defined between stacked forms therein so as to prevent outward movement of portions of said horizontal joints, as required in appellant's claims 21 through 23 on appeal. It is the tongue and groove joints between the panels in German '730 which resist or prevent the outward movement of portions of said horizontal joints and not the pressure-distribution members (18) which are spaced well away from the horizontal joints therein. Accordingly, the examiner's rejection of claims 21 through 23 on appeal will not be sustained.

Appellant's claim 24 defines an arrangement wherein the "exterior side" of the concrete wall has foam panels abutting the surface thereof and comprising insulation that will "deter spalling of the concrete due to freeze thaw action of the completed wall." We understand the "exterior side" recited in this claim to be an outside surface of an exterior portion of the completed concrete wall that is subjected to weathering

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

due to the elements and is vulnerable to spalling of the concrete due to such weathering (i.e., due to freeze thaw action). Like appellant, we note that both German '730 and Prumm require that the exterior side of an outside concrete wall therein that is subjected to weathering must be covered with something more resistant to weathering than the foam panels otherwise used in the formation of the walls. Note element (10) of German '730 and (42) of Prumm which are each formed of materials (e.g., polyester and ground marble (element 10), or glued wood chips (element 42)) that are said to be resistant to weathering. Thus, both of these references teach away from having soft foam insulation panels on the exterior side of an outside wall as is required in appellant's claim 24 on appeal. For that reason, we will not sustain the examiner's rejection of appellant's claim 24 under 35 U.S.C. § 103 based on the teachings of German '730 and Prumm.

In summary:

We have affirmed the examiner's rejection of claims 14, 31 and 34 through 36 under 35 U.S.C. § 103; and reversed the

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

examiner's rejection of claims 15, 16 and 21 through 24 under
35 U.S.C. § 103.

The decision of the examiner is accordingly affirmed-in-
part.

Appeal No. 99-0318
Reexamination Nos. (90/004,673 and 90/004,627)

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

| | | |
|-----------------------------|---|-----------------|
| JAMES M. MEISTER |) | |
| Administrative Patent Judge |) | |
| |) | |
| |) | |
| |) | |
| |) | BOARD OF PATENT |
| CHARLES E. FRANKFORT |) | APPEALS |
| Administrative Patent Judge |) | AND |
| |) | INTERFERENCES |
| |) | |
| |) | |
| |) | |
| JOHN F. GONZALES |) | |
| Administrative Patent Judge |) | |

CEF/sld

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

Claims

14. A concrete wall comprising:
a concrete portion and
a series of forms which were employed for holding the concrete
during the period of time during which the concrete was
poured
and was cured,
each said form comprising a pair of parallel and spaced
vertical panels composed of molded plastic material, each
such panel
having a backing plate of a material that is relatively
strong
as compared to the molded plastic and is capable of having a
substantial load secured thereto, said backing plates
abutting
the exterior surface of each panel and holding means passing
directly through the wall and interconnecting said plates to
prevent outward horizontal movement of said plates and of
said
panels,
said forms being stacked one above the other to provide an
upwardly extending elongated cavity,
said concrete filling said cavity and securely holding said
backing plates in position as a part of the finished
permanent
wall so that loads may be attached to said backing plates;
said plates, panels, holding means and concrete all being
permanent parts of said permanent wall, and
wall covering attached to said backing plates.

15. A permanent concrete wall as defined claim 14 in
which said backing plates are elongated metallic plates
positioned on each of said forms so that the plate of each
form is an extension of the plates on adjacent forms to
thereby provide a larger plate extending along the wall to
provide a convenient means for attaching loads to the wall
over an area at least partly covering a series of forms.

16. Permanent formwork according to claim 15 wherein each of said panels has two backing plates abutting its exterior surface when said formwork is constructed.

21. A concrete wall as defined in claim 14 in which said stacked forms have horizontal joints between them, and at least one of the backing plates on each form extending adjacent to at least a portion of at least one of said horizontal joints to prevent outward movement of said portion.

22. A concrete wall as defined in claim 21 wherein said backing plates extend closely adjacent to a portion of a horizontal joint.

23. A concrete wall as defined in claim 22, in which at least two adjacent ones of said forms have mating shiplap joints.

24. A concrete wall as defined in claim 14 in which said concrete portion has an interior side and an exterior side, at least some of said forms having one of its panels abutting said exterior side and one of its backing plates abutting the panel that abuts said exterior side, one of said molded plastic panels being on the exterior side of the wall and comprises insulation that will deter spalling of the concrete due to freeze thaw action of the completed wall.

31. A concrete wall as defined in claim 14, in which said holding means has at least one connecting member that is in one piece and which extends to and directly connects to a backing plate on one of said pairs of parallel panels and extends to and directly connects to a backing plate on the other one of said parallel panels.

34. A concrete wall as defined in claim 14, in which said holding means includes a one-piece mechanical element that prior to the stacking of the forms permanently connects a backing plate, that is on one of the panels of one said pairs of parallel panels, with a backing plate that is on the other panel of said one pair.

Appeal No. 99-0318

Reexamination Nos. (90/004,673 and 90/004,627)

35. A concrete wall as defined in claim 34, in which said concrete portion has an elongated reinforcement attached to said one-piece mechanical element.

36. A concrete wall as defined in claim 14, in which said holding means comprises a mechanical element that structurally interconnects two backing plates to prevent them from moving away from each other, each said panel having at least two backing plates and the molded plastic of each panel joining both backing plates of that panel to each other and to said mechanical element thereby forming one integral stackable unit.

Appeal No. 99-0318
Reexamination Nos. (90/004,673 and 90/004,627)

William D. Hall
Myers, Liniak and Berenato
10850 Stanmore Drive
Potomac, MD 20854

Richard S. Meyer
Morgan, Lewis and Buckins, LLP
1800 M Street, N.W.
Washington, D.C. 20036

Shereece

Appeal No. 99-0318
Application No. 90/004,673 AND

90/004,627

APJ FRANKFORT

APJ GONZALES

APJ MEISTER

AFFIRMED-IN-PART

Prepared: September 9, 1999